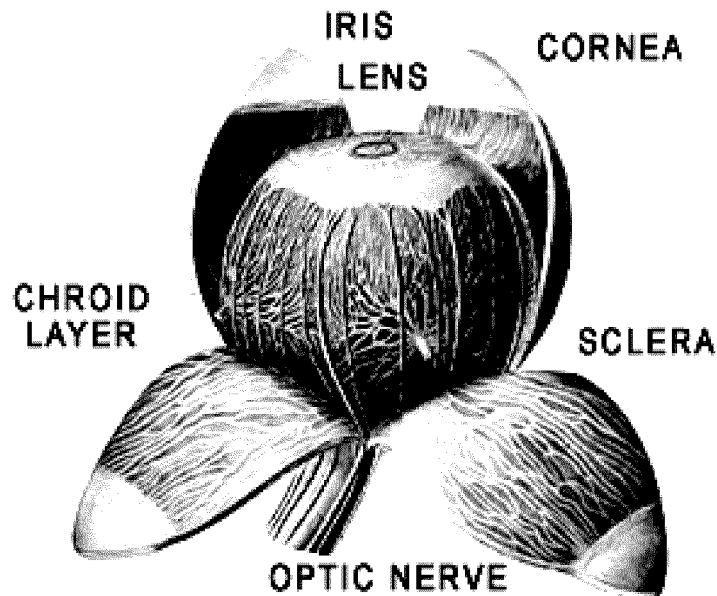


Uveal tract



Dr/ Mahmoud Medhat

*To the only one who gave me **HOPE***

Densely pigmented, highly vascular middle coat of the eye. Formed of:

I. Anterior uvea:

- Iris.

- Ciliary body.

II. Posterior uvea:

- Choroid.

Iris:

Thin circular disc, perforated by a central round opening (Pupil).

It gives the colour of the eye.

Size of the pupil is controlled by: Dilator & constrictor pupillae muscles.

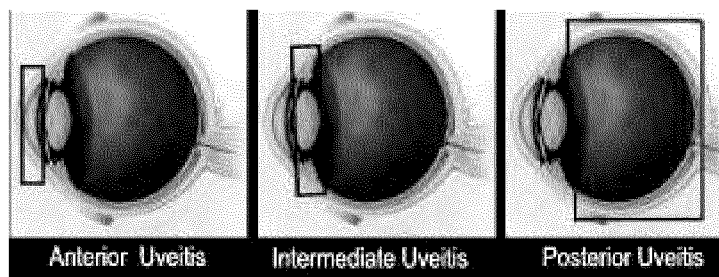
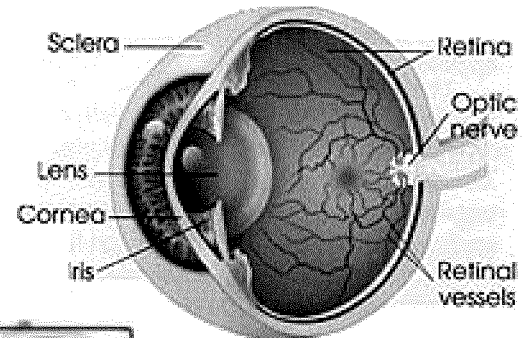
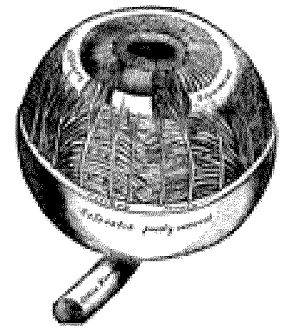
Ciliary body:

Consists of pars plicata (Anterior part, containing the ciliary processes) & pars plana (Posterior part which is smooth).

It is responsible for aqueous secretion & control of accommodation.

Choroid:

Layers of blood vessels attached to the ciliary body anteriorly & to the optic nerve edges posteriorly.



Acute iridocyclitis

Definition: Inflammation of the iris & ciliary body, commonly occurring together due to sharing a common blood supply.

Iridocyclitis may be: acute or chronic, endogenous or exogenous, granulomatous or non-granulomatous.

Etiology

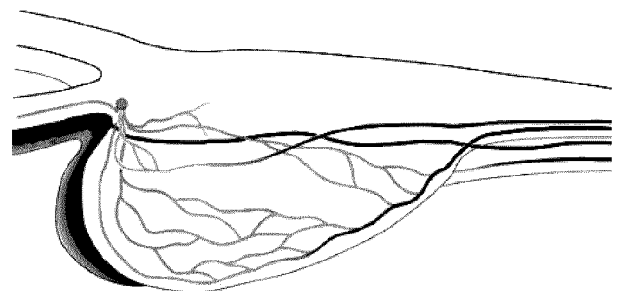
I. Exogenous: Intraocular surgery or penetrating trauma.

II. Endogenous:

1. Secondary to ocular disease:

a. Keratitis.

b. Rupture of the lens capsule (Iritis phacoanaphylactica).



- c. Lens dislocation.
- d. Longstanding retinal detachment.
- e. Intraocular tumour.

2. Associated with systemic disease:

- | | |
|---------------------|------------------------------|
| a. Sarcoidosis. | d. Measles, H. Zoster & CMV. |
| b. T.B. & syphilis. | |
| c. Toxoplasmosis. | e. Candidiasis. |

3. Autoimmune:

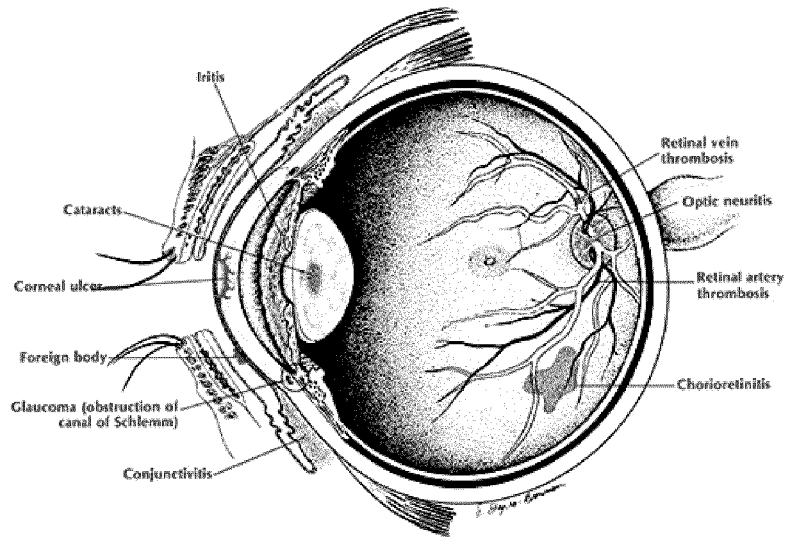
- a. Behcet's disease: Recurrent orogenital ulceration + recurrent uveitis with Hypopyon.
- b. Vogt-Koyanagi-Harada syndrome: Uveitis, poliosis, vitilligo, deafness & exudative choroiditis ⇒ exudative retinal detachment.
- c. Sympathetic ophthalmitis.

Symptoms

- 1. Pain:
 - Dull-aching, referred to the brows & increases at night.
 - Due to irritation of the free nerve endings of the 5th cranial nerve & spasm of the ciliary body muscle.
- 2. Headache: In the forehead & around the eye.
- 3. Photophobia, blepharospasm & reflex lacrimation.
- 4. Decreased vision, due to:
 - a. Turbidity of the aqueous & vitreous.
 - b. Edema of the cornea.
 - c. Spasm of accommodation.
 - d. Keratic percepts.
 - e. Toxic maculopathy.

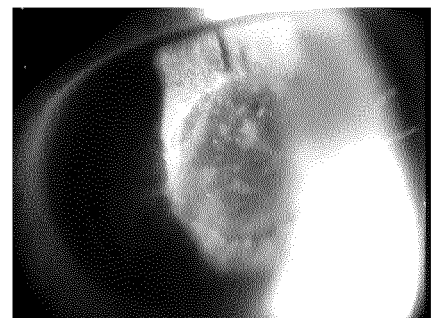
Signs:

1. **Lid:** Edema.
2. **Conjunctiva:** Ciliary injection.
3. **Cornea:** Edema.
4. **Keratic prcepitates (KP's):** Inflammatory cells deposited on the corneal endothelium.
5. Aqueous cells: Inflammatory cells.
6. Aqueous flare: Plasmoid aqueous due to leakage of proteins from the damaged blood vessels.
7. Hyphema: In herpetic & tuberculous iridocyclitis.
8. Iris: Muddy, due to accumulation of exudates on the iris surface.
9. pupil: Miosis.
10. Ciliary body: Tenderness.
11. Lens: precipitation of iris pigments on the anterior lens capsule.
12. Vitreous: Inflammatory cells.
13. Intraocular pressure (IOP):
 - Acute cases: Usually low, but may increase due to plasmoid aqueous.
 - Chronic or recurrent cases: Elevated due to secondary glaucoma.



Complications

1. Posterior synechiae: Adhesions of the iris to the lens:
 - **Occlusio pupillae:** Occlusion of the pupil by organized exudates.



- **Seclusio pupillae (Ring synechiae):** Adhesion of the pupillary border to the lens.
- **Festooned pupil:** Multiple isolated posterior synechiae.

2. Secondary glaucoma:

- Angle block: peripheral anterior synechiae in chronic cases.
- Pupillary block.: Occlusio pupillae & ring synechiae.

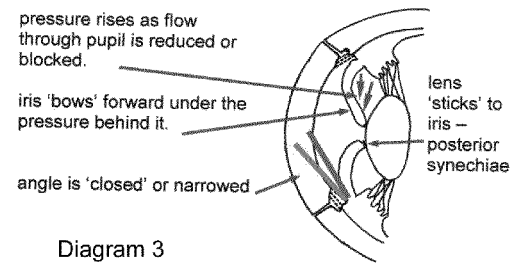
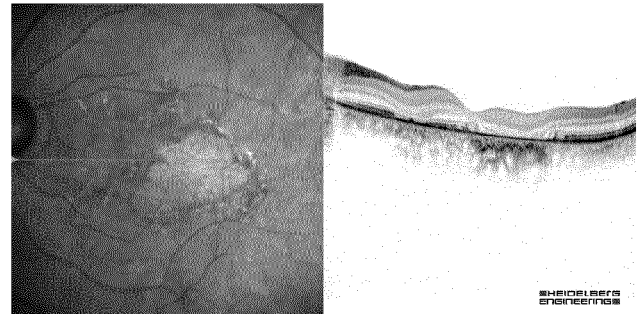


Diagram 3

3. Complicated cataract: In chronic cases. May be due to prolonged steroid use.

4. Cystoid macular edema: Due to inflammatory mediators.

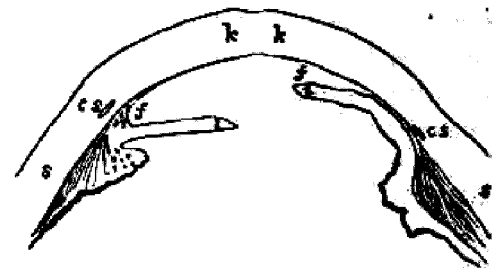
5. Cyclitic membrane: Organization of exudates



behind the lens + vascularization from the ciliary body. It may cause ciliary body detachment $\Rightarrow$ hypotony $\Rightarrow$ atrophía bulbi.

Complications of long-standing iridocyclitis

1. Absolute glaucoma.
2. Rubeosis irides & neovascular glaucoma.
3. Atrophía bulbi.
4. Band-shaped keratopathy.
5. Ectropion uveae.



Diagnosis

1. Careful history taking.

Sarcoidosis	• Chest X-ray. • Angiotensin converting enzyme.
Arthritis	• X-ray. • HLA-B27. • Rheumatoid factor.

2. Careful ocular & systemic diagnosis.

3. Appropriate laboratory investigations, to reach an etiologic diagnosis:

- Full blood picture.
- Immunological tests.
- Radiological investigations.
- Ultrasonography.
- Ocular tissue sampling.

	• Anti-nuclear antibodies.
Syphillis	• Wassermann test. • VDRL.
Toxoplasmosis	• Complement fixation test.
TB	• Chest X-ray. • Tuberculin test.

Differential diagnosis of acute iridocyclitis: Differentiated from other causes of acute red eye:

	Conjunctivitis	Corneal ulcer	Acute iridocyclitis	Acute glaucoma
Pain	Discomfort	Dull aching	Dull aching	Bursting
↓ VA	No	Yes	Yes	Yes
Ocular association	Discharge	Photophobia & lacrimation	Photophobia	Severe photophobia
Systemic association	No	No	Arthritis, Psoriasis	Nausea & vomiting
Conjunctiva	Congestion & discharge	Ciliary injection	Ciliary injection	Ciliary injection
Cornea	Clear	+ve fluorescein dye test	Hazy cornea & KP's	Corneal edema +/- Fine KP's
Anterior chamber	Normal	Normal or aqueous flare with 2ry iritis	Aqueous flare, plasmoid aqueous & hypopyon	Shallow AC, Fine flare & 2ry iritis
Iris	Normal	Normal	Muddy & synechiae	May be muddy
Pupil	Normal	Normal	Normal, miosis or festooned	Oval with the longitudinal axis vertical, semi-dilated & greenish
Lens	Normal	+/- Complicated cataract	+/- Complicated cataract	+/- Complicated cataract
IOP	Normal	Normal or 9	Normal, 9 or K	Stony hard
Treatment	Hot fomentations, antibiotic	Bandage, atropine, antibiotic or antiviral	Dark glasses, steroids & atropine	Essentially surgical

Treatment

1. Local treatment:

a. Hot fomentations: For relief of pain.

b. Dark glasses: For relief of photophobia.

c. Atropine sulphate (*Mydriatic & cycloplegic*):

- Drops are better avoided in children (avoid systemic toxicity)
- Advantage:
 - Relieves pain.
 - Prevents posterior synechiae.
 - Decreases exudation from the surface of the iris.

d. Corticosteroid: Dexamethazone eye drops or ointment.

Steroids are anti-inflammatory, anti-allergic & anti-fibroblastic.

2. Systemic treatment:

a. Treatment of the cause.

b. Corticosteroids:

- Contraindicated in infection, DM, Cardiac & renal patients.
- Side effects: Salt & water retention, hyperglycemia & acute gastric erosions.

c. NSAIDs.

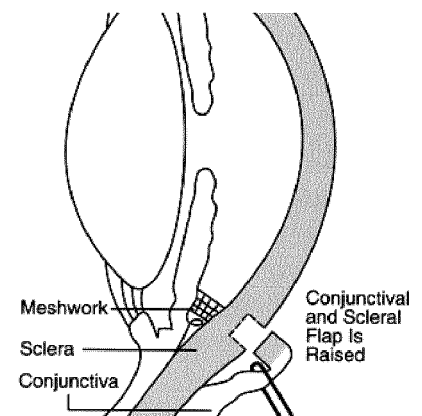
d. Antibiotics: In infective cases, syphilis & T.B.

e. Immunosuppressive & cytotoxic drugs: In autoimmune uveitis & steroid-resistant cases.

3. Treatment of complications:

a. Glaucoma:

- Acute stage: Beta-blockers & Carbonic Anhydrase Inhibitors + continuation of atropine & steroid.
- Chronic stage:
 - Pupillary block glaucoma: Peripheral iridectomy.
 - Peripheral Anterior Synechiae: External fistulizing operation.



- b. Complicated cataract: Cataract extraction 6 months after subsidence of the acute attack.
- c. Cyclitic membrane: Vitrectomy.
- d. Blind painful eye: Enucleation.

N.B. Characters of chronic iridocyclitis:

- Long course with exacerbations & remissions.
- **Mutton-fat KP's**: Beige in colour & waxy in appearance.
- **Iris nodules**: Koeppe nodules & Busacca nodules.
- Dust-like opacities in the vitreous: Mainly wandering macrophages.

Choroiditis

Classification:

1. Non-suppurative:

- Exudative: Non specific response with marked exudation.
- Granulomatous: Due to allergy to bacterial toxins, as in T.B. or streptococcal septic focus.

2. Suppurative:

- Endophthalmitis.
- Panophthalmitis.

Endophthalmitis

Definition: Purulent inflammation of the intra-ocular tissues, due to:

1. infection (endogenous or exogenous).
2. Trauma.
3. Immune reaction.
4. Physical or chemical agents.
5. Vasculitis.
6. Neoplasm.

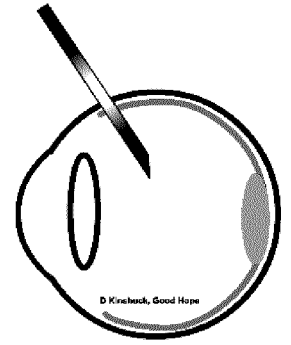
The inflammation is limited to the intra-ocular tissues, with free outer coat of the eye (Cornea, sclera & tenon's capsule).

Clinical picture

1. Lid edema.
2. Ciliary injection.
3. Pain.
4. Decreased vision.
5. Reaction in the aqueous & vitreous.

Management

1. Hospitalization.
2. Vitreous smears.
3. Paracentesis.
4. Antibiotics:
 - Intravitreal: Vancomycin (1mg) + Ceftazidime or amikacin.
 - Subconjunctival: Vancomycin (25mg) + Ceftazidime or amikacin.
 - Topical: Vancomycin (50mg) + ceftazidime or fortified gentamycin.
 - Systemic: Amikacin or ciprofloxacin.
5. Monitor the kidney functions for fear of antibiotic nephrotoxicity.
6. Vitrectomy: If visual acuity diminished to perception of light.
7. Enucleation: If no perception of light.



Management of fungal endophthalmitis

1. Evaluation.
2. Amphotrecin B: Intravitreal, topical & systemic.
3. Enucleation.

Panophthalmitis

Different from endophthalmitis in that the inflammation extends to involve all the ocular tissues, including the outer coat.

Clinical picture

1. General constitutional symptoms.
2. Pain: Severe.
3. Decreased vision: No PL.

4. Reaction of the vitreous (Yellow reflex) & aqueous (Hypopyon).
5. Severe edema of the lids & conjunctiva.
6. Proptosis.
7. Limited ocular movement.
8. Abscess of the cornea with pus bursting through it.

Differential diagnosis

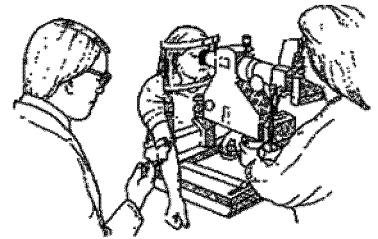
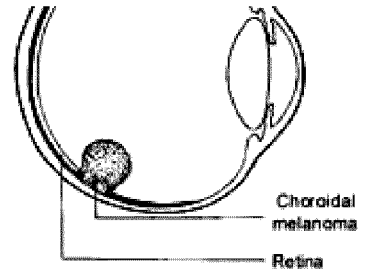
Treatment: Endophthalmitis + Evisceration.

Malignant Melanoma

The commonest primary intraocular tumour in adults.

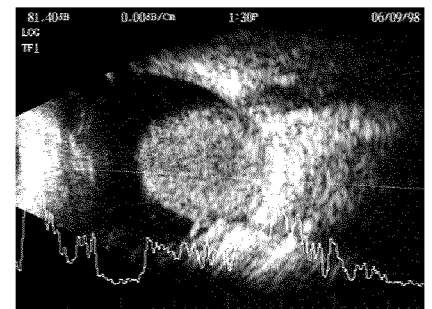
Clinical features

- Ophthalmoscopy:
 - Unilateral, elevated, brown, oval-shaped mass.
 - May be mottled with pigment.
- Early peripheral tumour: Asymptomatic.
- Early tumour affecting the macular area: Decreased vision.
- Later: Diminution of vision, due to:
 - Retinal detachment.
 - Secondary glaucoma.
- Late stages: Proptosis, due to extension to the orbit.



Investigations:

1. Ophthalmoscopy:
2. Fundus photography: For documentation & follow up.
3. Ultrasonography: " " " "



Differential diagnosis

1. Choroidal naevus.
2. D.D. of the cause of retinal detachment.

3. Choroidal metastasis: Usually bilateral.

Management

1. Small, slowly progressive tumour in single eye: Observation & documentation.
2. Small peripheral lesion: Local resection.
3. Small & medium sized tumours near the posterior pole: Radioactive plaques fixed to the globe.
4. Large tumours: Enucleation, preceded by external beam irradiation to lessen the risk of metastasis.
5. Transpupillary Thermo-Therapy (TTT).

